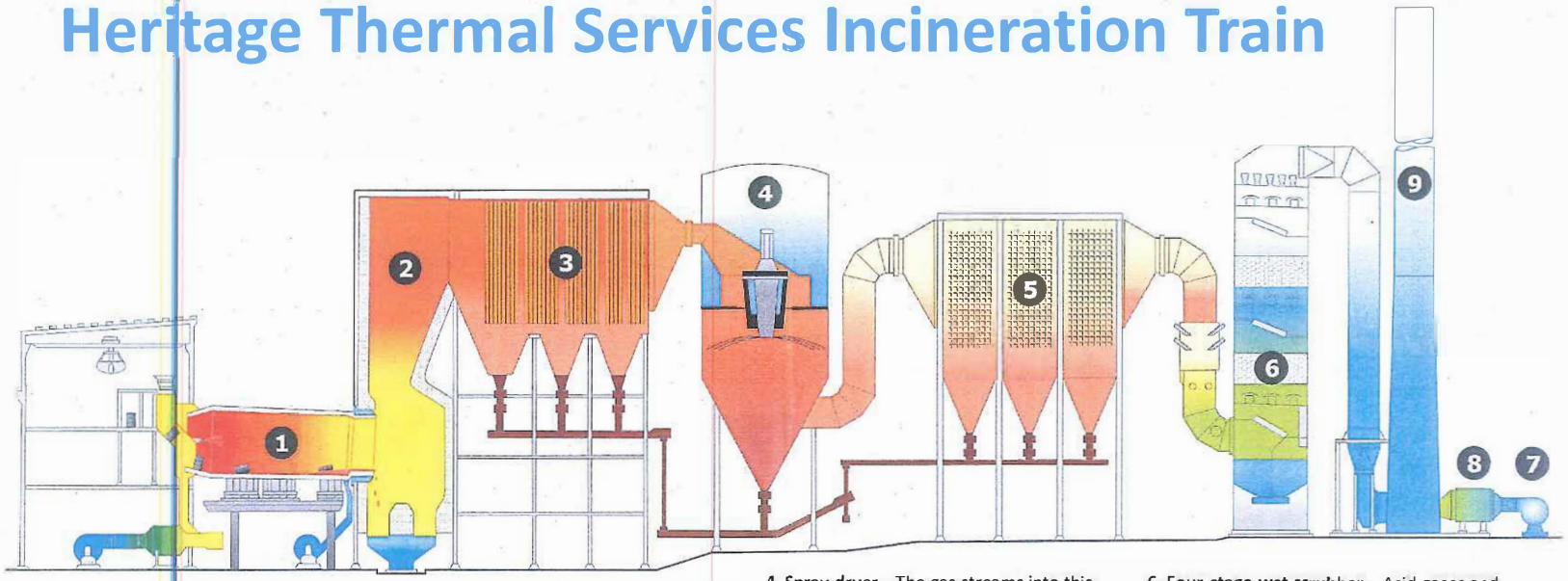
Heritage Thermal Services Incineration Train



1. Rotary kiln – The kiln is a refractory brick-lined steel cylinder, measuring about 43 feet in length and 16.5 feet in diameter. Pumpable waste is fed into the kiln through pipes, called lances. Drums and containers are fed through a double-door entry that leads to a chute. Loose bulk solids are fed into a double-door hopper, which also leads to the feed chute. Same-sized containers, such as packaged consumer commodities, are fed through the same double-door hopper. It is in the kiln's interior where the three Ts – TIME, TEMPERATURE and TURBULENCE – combine to incinerate hazardous organic compounds. Temperatures range between 1,800 and 2,200 degrees Fahrenheit as waste moves through the rotating kiln.

2. Secondary combustion chamber – The exhaust from incinerated waste flows in this chamber for further combustion, which is enhanced by the controlled injection of oxygen. Slag from combustion collects at the bottom of the chamber, where it's removed via a conveyor for shipment to an authorized hazardous waste landfill.

3. Boiler – Combustion gas moves upward through the secondary combustion chamber into the boiler, where it passes through an array of tubes containing water for generating steam. The steam is used in several of the facility's processes, including heat for the buildings. Blowers that emit high-pressure compressed air prevent the buildup of ash on the tubes.

4. Spray dryer – The gas streams into this unit, where it is cooled with sprays of water. This cooling process generates salt, which collected at the bottom of the cone and, like the slag, it is sent off-site to an authorized hazardous waste landfill for disposal. In addition to cooling the gas, the spray dryer completely evaporates water from the wet scrubber [6]. Without the spray dryer, scrubber water would have to be collected and shipped off-site for treatment and disposal.

5. Electrostatic precipitator – This component features three rows of electrically charged fences. As combustion gas moves through them, particulate material adheres to the metal bars. Electronically timed hammers on top of the unit knock the particles downward into the hopper, where they are collected with salt from the spray dryer for transport to an authorized hazardous waste landfill.

6. Four-stage wet scrubber – Acid gases and submicron-sized particles are removed in this unit, which is made up of packed scrubbing beds and spray jets. Water used in this process is recycled to spray dryer, where it is evaporated.

7. Induced-draft fan- This fan maintains negative air pressure throughout the entire system, ensuring that air is always drawn inward at all times.

8. Re-heater – Before the cleaned and scrubbed gas is emitted, it passes through this unit where it its temperature is raised to about 190 degrees Fahrenheit. Doing so improves the elevation of the plume and the effectiveness of the in-stack monitors.

9. Stack – The gas is emitted through a single stack.